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PRO

LAND APPLICATION OF BIOSOLIDS  
ROGERS W. CARLTON

KQ29 (FIELDS 1 – 10)  
KING & QUEEN COUNTY, VIRGINIA  
JUNE 2012



June 29, 2012

Mr. Scott Healey  
Department of Environmental Quality  
Piedmont Regional Office  
4949-A Cox Road  
Glen Allen, VA 23060

Dear Mr. Healey,

Transmitted herein for your consideration is land application site for, Rogers W. Carlton. (designated as KQ 29, fields 1 - 10), located in King & Queen County, Virginia. This submission contains strictly site specific information. Please refer to the operations and maintenance manual submitted under separate cover for all non-site specific information.

Do not hesitate to contact me at (804) 443-2170 should you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Sylva".

Chris Sylva  
Technical Services Manager



## FIELD SUMMARY SHEET

Rogers W. Carlton

KQ29

SYNAGRO FIELD #	GROSS ACRES	NET ACRES	FSA TRACT #	FSA FIELD #	TOPO QUAD	OWNER
29-01	78.8	78.8	446		Truhart	Rogers W. Carlton
29-02	47.5	47.5	446		Truhart	Rogers W. Carlton
29-03	37.8	37.2	446		Truhart	Rogers W. Carlton
29-04	66.5	65.7	446		Truhart	Rogers W. Carlton
29-05	16.0	16.0	446		Truhart	Rogers W. Carlton
29-06	32.0	30.9	446		West Point	Rogers W. Carlton
29-07	15.4	15.4	446		West Point	Rogers W. Carlton
29-08	16.2	16.2	492		West Point	Rogers W. Carlton
29-09	9.0	7.0	492		Truhart	Rogers W. Carlton
29-10	32.2	31.0	492		Truhart	Rogers W. Carlton
<b>TOTALS:</b>	351.4	345.7				

**VIRGINIA POLLUTION ABATEMENT APPLICATION  
FORM D : MUNICIPAL EFFLUENT AND BIOSOLIDS**

**PART D-VI: LAND APPLICATION AGREEMENT- BIOSOLIDS AND INDUSTRIAL RESIDUALS**

A. This biosolids/industrial residuals land application agreement is made on 6/20/12 between Rogers Carlton referred to here as "Landowner", and Synagro referred to here as the "Permittee". This agreement remains in effect until it is terminated in writing by either party or until ownership of all parcels changes. If ownership of individual parcels identified in this agreement changes, those parcels for which ownership has changed will no longer be authorized to receive biosolids or industrial residuals under this agreement.

**Landowner:**

I am the registered owner of real property known as Rogers W. Carlton, located in VA, Virginia, which includes the agricultural sites identified below in Table 1 and identified on the tax map(s) attached as Exhibit A

Table 1.: Parcels authorized to receive biosolids, water treatment residuals or other industrial sludges			
<u>Tax Parcel ID</u>	<u>Tax Parcel ID</u>	<u>Tax Parcel ID</u>	<u>Tax Parcel ID</u>

☐ Additional parcels containing Land Application Sites are identified on Supplement A (check if applicable)

Check one: ☒ I am the sole owner of the properties identified herein.  
☐ I am one of multiple owners of the properties identified herein.

In the event that I, the landowner, sell or transfer all or part of the property to which biosolids have been applied within 38 months of the latest date of biosolids application, I shall:

1. Notify the purchaser of the applicable public access and crop management restrictions no later than the closing date; and
2. Notify the permit holder of the sale within two weeks following closing.

I have no other agreements for land application on the fields identified herein. I will notify the permittee immediately if conditions change such that the fields are no longer available to the permittee for application or any part of this agreement becomes invalid.

I hereby grant permission to the Permittee to land apply residuals as specified below, on the agricultural sites identified above and in Exhibit A. I also grant permission for DEQ staff to conduct inspections on my land identified above, before, during or after land application of permitted residuals for the purpose of determining compliance.

Class B biosolids	Water treatment residuals	Food processing waste	Other industrial sludges
X Yes <input type="checkbox"/> No	X Yes <input type="checkbox"/> No	X Yes <input type="checkbox"/> No	X Yes <input type="checkbox"/> No

<u>Rogers W. Carlton</u>	<u>594 Beam Run Ford Rd.</u>
Landowner- Printed Name	Mailing Address

**Permittee:**

Synagro, the permittee, agrees to apply biosolids and/or industrial residuals on the landowner's land in the manner authorized by the VPA Permit Regulation and in amounts not to exceed the rates identified in the nutrient management plan prepared for each land application field by a person certified in accordance with §10.1-104.2 of the Code of Virginia. Permittee will provide a copy of the NMP to the landowner within 30 days after land application has commenced. If the plan requires modification to reflect the actual application rates or farming practices at the site, a revised plan will be provided within 2 weeks of the modification.

Permittee agrees to notify landowner or landowner designee of the proposed schedule for land application and specifically prior to any particular application to landowner's land. Notice shall include the source of residuals to be applied.

<u>Chris Sylva</u>	<u>CA</u>	<u>10647 Tidewater Trail</u>
Permittee- Authorized Representative	Signature	Mailing Address
Printed Name		



**VIRGINIA POLLUTION ABATEMENT APPLICATION  
PART D-VI LAND APPLICATION AGREEMENT**

Page 2 of 2

Permittee: Synagro Central, LLC  
Landowner: \_\_\_\_\_

Permit # or County: \_\_\_\_\_  
Farm Name or Address: \_\_\_\_\_

**Landowner Site Management Requirements:**

I, the landowner, I have received a DEQ Biosolids Fact Sheet that includes information regarding regulations governing the land application of biosolids, the components of biosolids and proper handling and land application of biosolids.

I have also been expressly advised by the Permittee that the site management requirements and site access restrictions identified below must be complied with after biosolids have been applied on my property in order to protect public health, and that I am responsible for the implementation of these practices.

I agree to implement the following site management practices at each site under my ownership following the land application of biosolids at the site:

1. Notification Signs: I will not remove any signs posted by the Permittee for the purpose of identifying my field as a biosolids land application site, unless requested by the Permittee, at least 30 days after land application at that site was completed.
2. Public Access
  - a. Public access to land with a high potential for public exposure shall be restricted for at least one year following any application of biosolids.
  - b. Public access to land with a low potential for public exposure shall be restricted for at least 30 days following any application of biosolids. No biosolids amended soil shall be excavated or removed from the site during this same period of time unless adequate provisions are made to prevent public exposure to soil, dusts or aerosols;
  - c. Turf grown on land where biosolids are applied shall not be harvested for one year after application of biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority
3. Crop Restrictions:
  - a. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after the application of biosolids.
  - b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface for a time period of four (4) or more months prior to incorporation into the soil,
  - c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months when the biosolids remain on the land surface for a time period of less than four (4) months prior to incorporation.
  - d. Other food crops and fiber crops shall not be harvested for 30 days after the application of biosolids;
  - e. Feed crops shall not be harvested for 30 days after the application of biosolids (60 days if fed to lactating dairy).
4. Livestock Access Restrictions:

Following biosolids application to pasture or hayland sites:

  - a. Meat producing livestock shall not be grazed for 30 days,
  - b. Lactating dairy animals shall not be grazed for a minimum of 60 days.
  - c. Other animals shall be restricted from grazing for 30 days;
5. Supplemental commercial fertilizer or manure applications will be coordinated with the biosolids and industrial residuals applications such that the total crop needs for nutrients are not exceeded as identified in the nutrient management plan developed by a person certified in accordance with §10.1-104.2 of the Code of Virginia;
6. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land for three years following the application of biosolids or industrial residuals borne cadmium equal to or exceeding 0.45 pounds/acre (0.5 kilograms/hectare).

Regan W. Carter  
Landowner's Signature

6-20-12  
Date

## Tax ID Landowner Identification Sheet

<u>Landowner</u>	<u>Field #</u>	<u>Tax ID</u>
Rogers W. Carlton	29-01	
Rogers W. Carlton	29-02	
Rogers W. Carlton	29-03	
Rogers W. Carlton	29-04	
Rogers W. Carlton	29-05	
Rogers W. Carlton	29-06	
Rogers W. Carlton	29-07	
Rogers W. Carlton	29-08	
Rogers W. Carlton	29-09	
Rogers W. Carlton	29-10	

<u>Field #</u>	<u>Latitude (north)</u>	<u>Longitude (west)</u>
29-01	37 <sup>0</sup> 37' 47.85"	76 <sup>0</sup> 50' 10.27"
29-02	37 <sup>0</sup> 38' 00.25"	76 <sup>0</sup> 50' 11.73"
29-03	37 <sup>0</sup> 37' 40.24"	76 <sup>0</sup> 49' 47.42"
29-04	37 <sup>0</sup> 37' 32.85"	76 <sup>0</sup> 49' 39.05"
29-05	37 <sup>0</sup> 37' 46.01"	76 <sup>0</sup> 49' 52.08"
29-06	37 <sup>0</sup> 37' 24.04"	76 <sup>0</sup> 50' 01.87"
29-07	37 <sup>0</sup> 37' 17.35"	76 <sup>0</sup> 49' 54.67"
29-08	37 <sup>0</sup> 37' 12.14"	76 <sup>0</sup> 50' 08.27"
29-09	37 <sup>0</sup> 38' 09.02"	76 <sup>0</sup> 50' 07.00"
29-10	37 <sup>0</sup> 38' 16.53"	76 <sup>0</sup> 50' 16.91"

## Environmentally Sensitive Areas

Field	Reason for Sensitive Area
29-01	High Leaching Potential (Map Unit 18B – 15%)
29-02	High Water Table (Map Unit 1A – 15%)
29-03	None
29-04	None
29-05	High Leaching Potential (Map Unit 18B – 31%)
29-06	High Leaching Potential (Map Unit 18B – 21%)
29-07	High Leaching Potential (Map Unit 18B – 14%)
29-08	High Water Table (Map Unit 8A – 20%) Flooded Soils (Map Unit 8A – 20%) High Leaching Potential (Map Unit 18B – 80%)
29-09	None
29-10	None

## King & Queen County Soils that are Environmentally Sensitive

Soil Map Unit	Series Name	Time of year		Environmental
		High Water	Flooded	
1A	Augusta	Dec – May		Leaching
2A, 2B	Bojac			
7A	Kinston	Nov – June	Nov – June	
8A	Levy	Jan – Dec	Jan – Dec	Drainage
12A	Rappahannock	Jan – Dec	Jan – Dec	Drainage
13A	Roanoke	Nov – May		
14B, 14C	Rumford			Leaching
18B	Tarboro			Leaching
20A	Tomotley	Nov – April		
21A	Wahee	Dec – March		

## Farm Summary Report

**Plan:** New Plan Fall, 2010 - Winter, 2013

**Farm Name:** KQ 29  
**Location:** King & Queen  
**Specialist:** Chris Sylva  
**N-based Acres:** 42.9  
**P-based Acres:** 320.0

**Tract Name:** 492  
**FSA Number:** 0  
**Location:** King & Queen

**Field Name:** 1  
**Total Acres:** 80.80 **Usable Acres:** 80.80  
**FSA Number:** 0  
**Tract:** 492  
**Location:** King & Queen  
**Slope Class:** B **Hydrologic Group:** B

**Riparian buffer width:** 0 ft  
**Distance to stream:** 0 ft

### *P-Index Summary*

P-based(1.0)

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

### **Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	6.3	VH(199 P ppm)	M-(79 K ppm)	A&L MIII	

### **Soils:**

PERCENT	SYMBOL	SOIL SERIES
15	19A	Tetotum
20	18B	Tarboro
20	19B	Tetotum
10	16A	State1
20	19C	Tetotum
5	5D	Emporia Slagle
10	10A	Munden

### **Field Warnings:**



**Field Name:** 2  
 Total Acres: 51.10 Usable Acres: 51.10  
 FSA Number: 0  
 Tract: 492  
 Location: King & Queen  
 Slope Class: A Hydrologic Group: B

Riparian buffer width: 0 ft  
 Distance to stream: 0 ft

*P-Index Summary*

P-based(1.0)

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	5.6	VH(237 P ppm)	M-(83 K ppm)	A&L Mill	

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
50	10A	Munden
15	1A	Augusta
15	19A	Tetotum
10	16A	State1
5	19C	Tetotum
5	19B	Tetotum

**Field Warnings:**

**Tract Name:** 446  
**FSA Number:** 0  
**Location:** King & Queen

**Field Name:** 3  
**Total Acres:** 39.00 **Usable Acres:** 37.60  
**FSA Number:** 0  
**Tract:** 446  
**Location:** King & Queen  
**Slope Class:** A **Hydrologic Group:** C

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

*P-Index Summary*

P-based(1.0)

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	6.2	VH(196 P ppm)	M(120 K ppm)	A&L MIII	

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
5	19C	Tetotum
85	19A	Tetotum
10	16A	State1

**Field Warnings:**

**Field Name:** 4  
Total Acres: 66.20 Usable Acres: 64.20  
FSA Number: 0  
Tract: 446  
Location: King & Queen  
Slope Class: A Hydrologic Group: C

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

*P-Index Summary*

P-based(1.0)

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	5.2	VH(154 P ppm)	L+(60 K ppm)	A&L Mill	

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
20	16A	State1
40	19A	Tetotum
30	19B	Tetotum
10	16B	State1

**Field Warnings:**

**Field Name:** 5  
Total Acres: 18.80 Usable Acres: 18.80  
FSA Number: 0  
Tract: 446  
Location: King & Queen  
Slope Class: B Hydrologic Group: B

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

*P-Index Summary*

Zero-P

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	5.2	VH(449 P ppm)	L+(65 K ppm)	A&L Mill	

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
45	18B	Tarboro
10	19A	Tetotum
45	19C	Tetotum

**Field Warnings:**

*Environmentally Sensitive Soils due to:*

*Soils with potential for leaching based on soil texture or excessive drainage*



**Field Name:** 6  
Total Acres: 30.50 Usable Acres: 28.50  
FSA Number: 0  
Tract: 446  
Location: King & Queen  
Slope Class: B Hydrologic Group: C

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

**Conservation Practices:**

Pasture (>75% cover)

**P-Index Summary**

Zero-P

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	5.1	VH(270 P ppm)	M+(175 K ppm)	A&L Mill	

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
15	19C	Tetotum
15	19B	Tetotum
50	19A	Tetotum
20	18B	Tarboro

**Field Warnings:**

**Field Name:** 7  
Total Acres: 15.70 Usable Acres: 15.00  
FSA Number: 0  
Tract: 446  
Location: King & Queen  
Slope Class: A Hydrologic Group: C

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

*P-Index Summary*

Zero-P

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	6.1	VH(369 P ppm)	H(212 K ppm)	A&L Mill	

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
5	8A	Levy
20	19B	Tetotum
60	19A	Tetotum
15	18B	Tarboro

**Field Warnings:**

**Field Name:** 8  
Total Acres: 25.90 Usable Acres: 24.00  
FSA Number: 0  
Tract: 446  
Location: King & Queen  
Slope Class: B Hydrologic Group: B

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

*P-Index Summary*

Zero-P

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K		Lab
Fa-2008	5.5	VH(461 P ppm)	M(113 K ppm)	A&L Mill	

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
80	18B	Tarboro
20	8A	Levy

**Field Warnings:**

*Environmentally Sensitive Soils due to:*

*Soils with potential for leaching based on soil texture or excessive drainage*

*Soils with high potential for subsurface lateral flow based on soil texture and poor drainage*

**Field Name:** 9  
Total Acres: 10.80 Usable Acres: 10.80  
FSA Number: 0  
Tract: 492  
Location: King & Queen  
Slope Class: B Hydrologic Group: C

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

*P-Index Summary*

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

DATE	PH	P	K	Lab
	[NO TEST]			

**Soils:**

PERCENT	SYMBOL	SOIL SERIES
10	8A	Levy
50	19C	Tetotum
40	16A	State1

**Field Warnings:**



**Field Name:** 10  
**Total Acres:** 32.10 **Usable Acres:** 32.10  
**FSA Number:** 0  
**Tract:** 492  
**Location:** King & Queen  
**Slope Class:** A **Hydrologic Group:** B

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

*P-Index Summary*

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

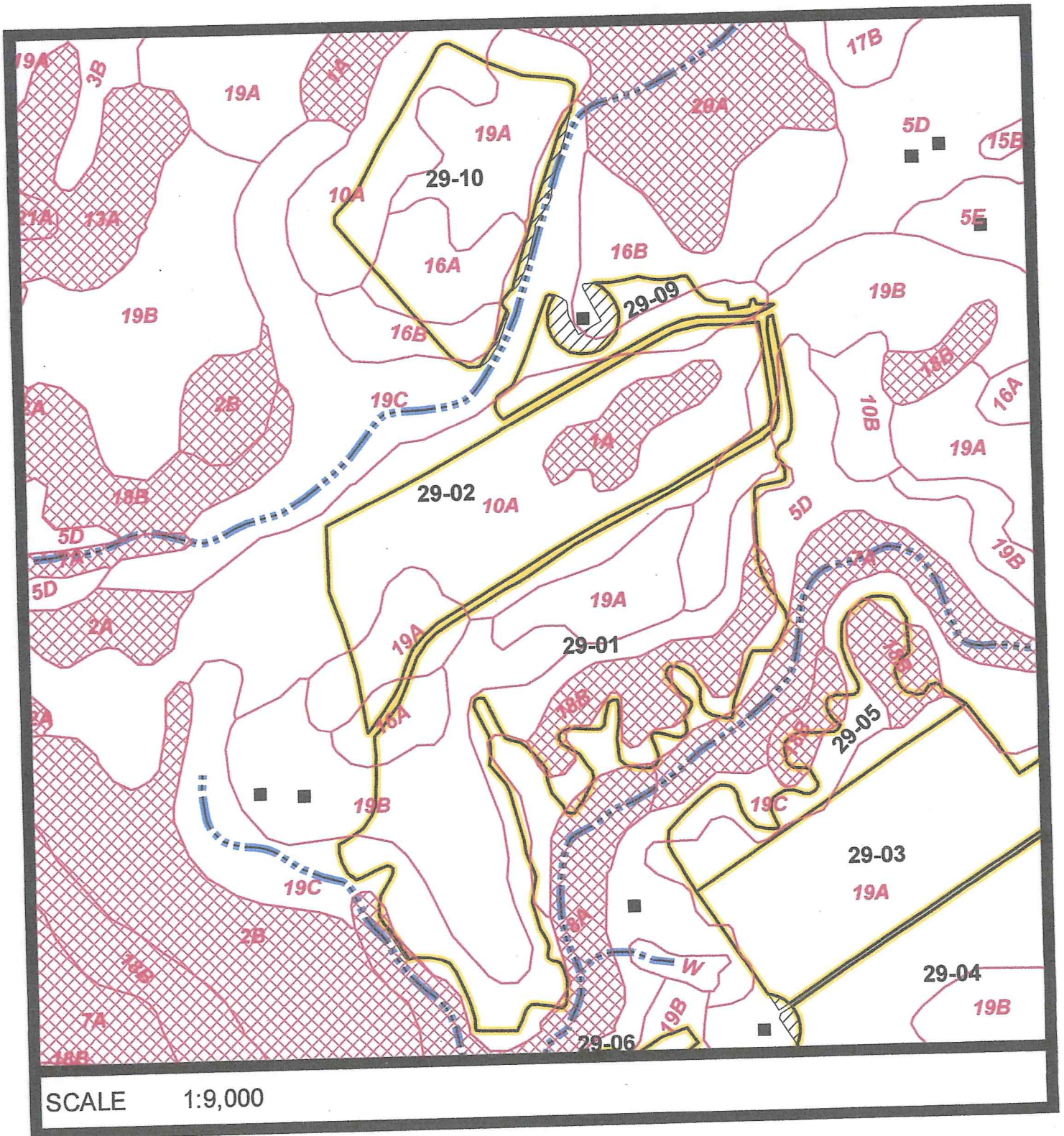
**Soil Test Results:**

DATE	PH	P	K	Lab
	[NO TEST]			


**Soils:**

PERCENT	SYMBOL	SOIL SERIES
40	19A	Tetotum
20	10A	Munden
25	16A	State1
10	16B	State1
5	19C	Tetotum

**Field Warnings:**

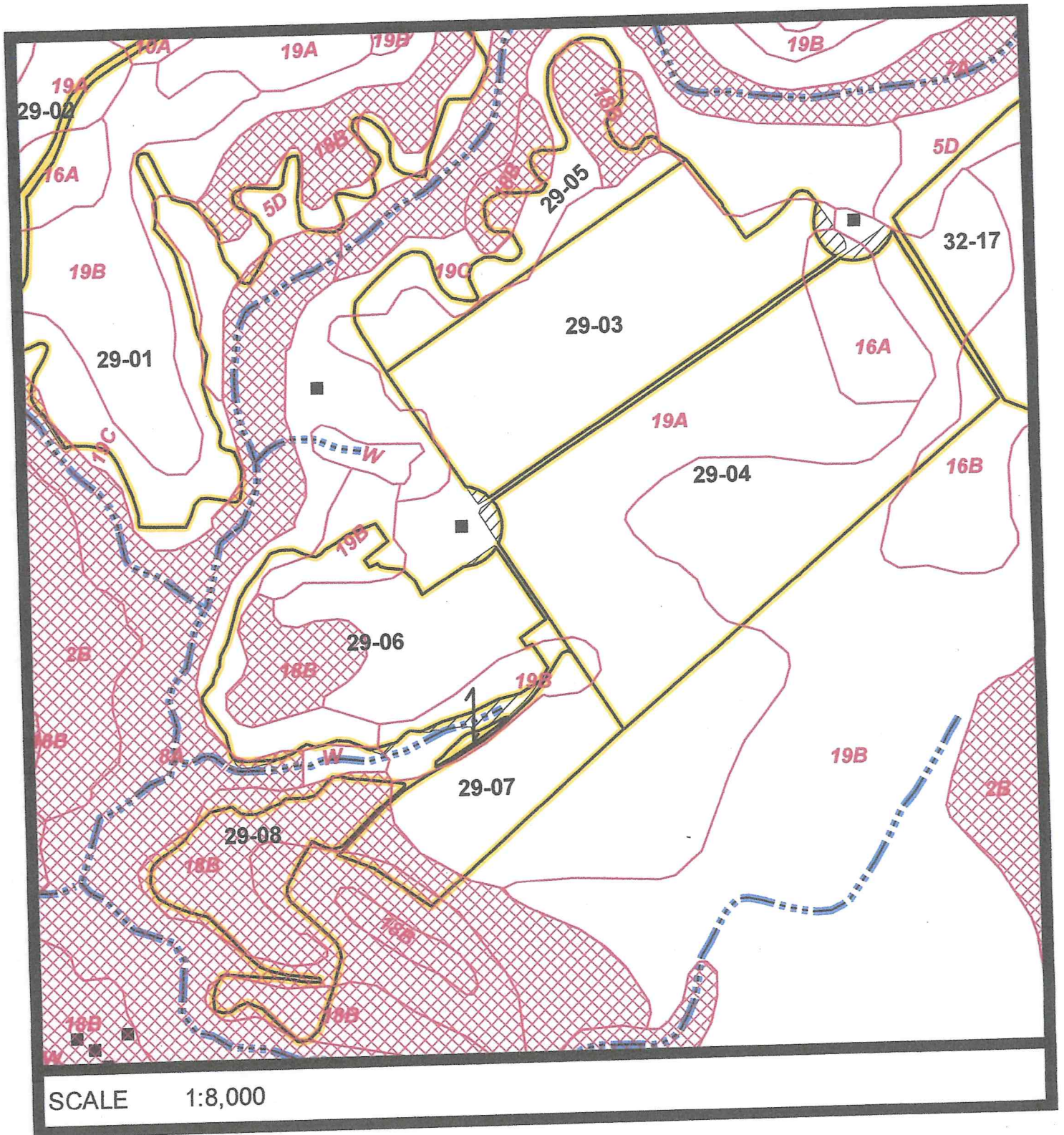


## SOIL MAP


 Environmentally Sensitive Areas





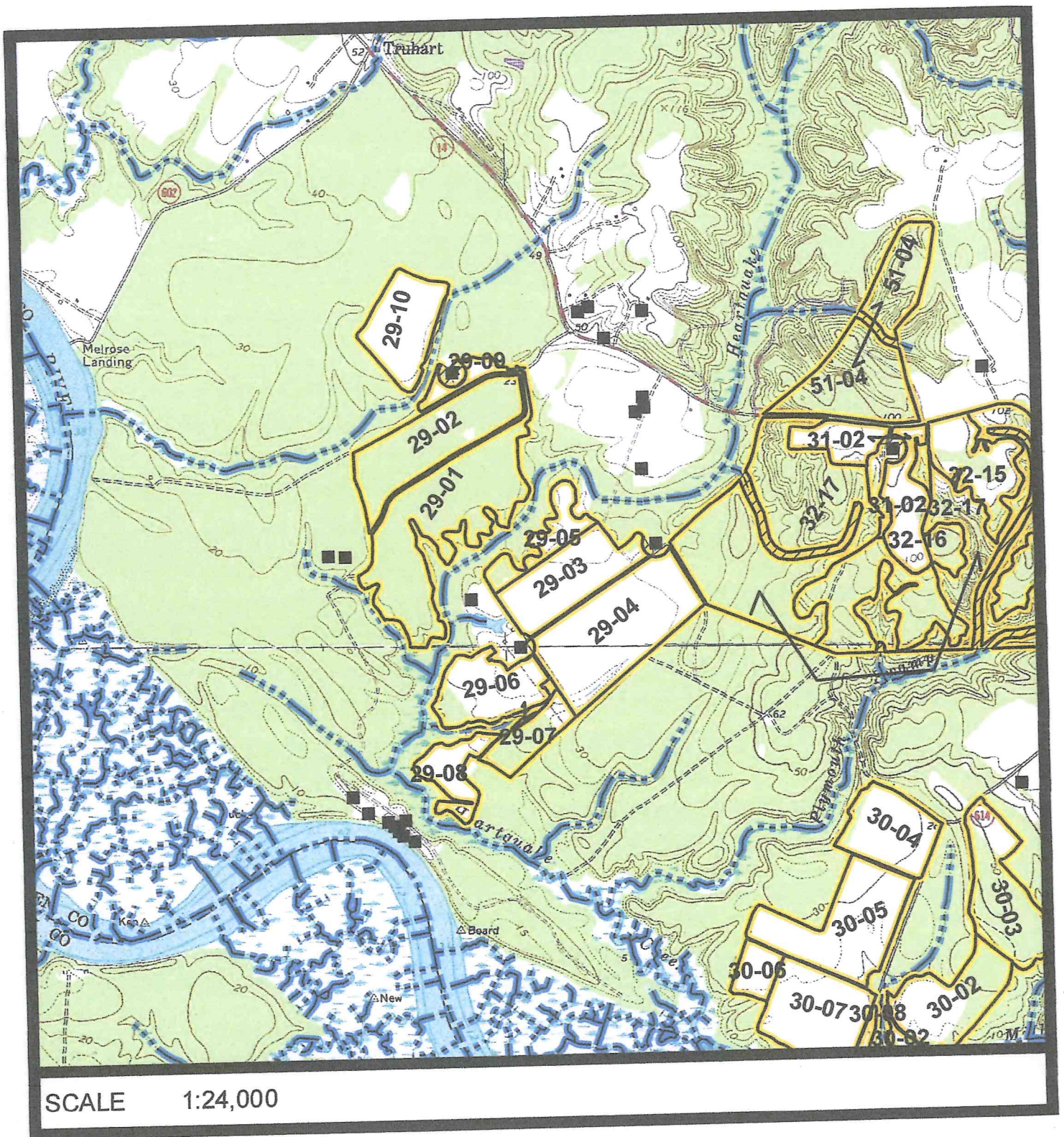


## SOIL MAP

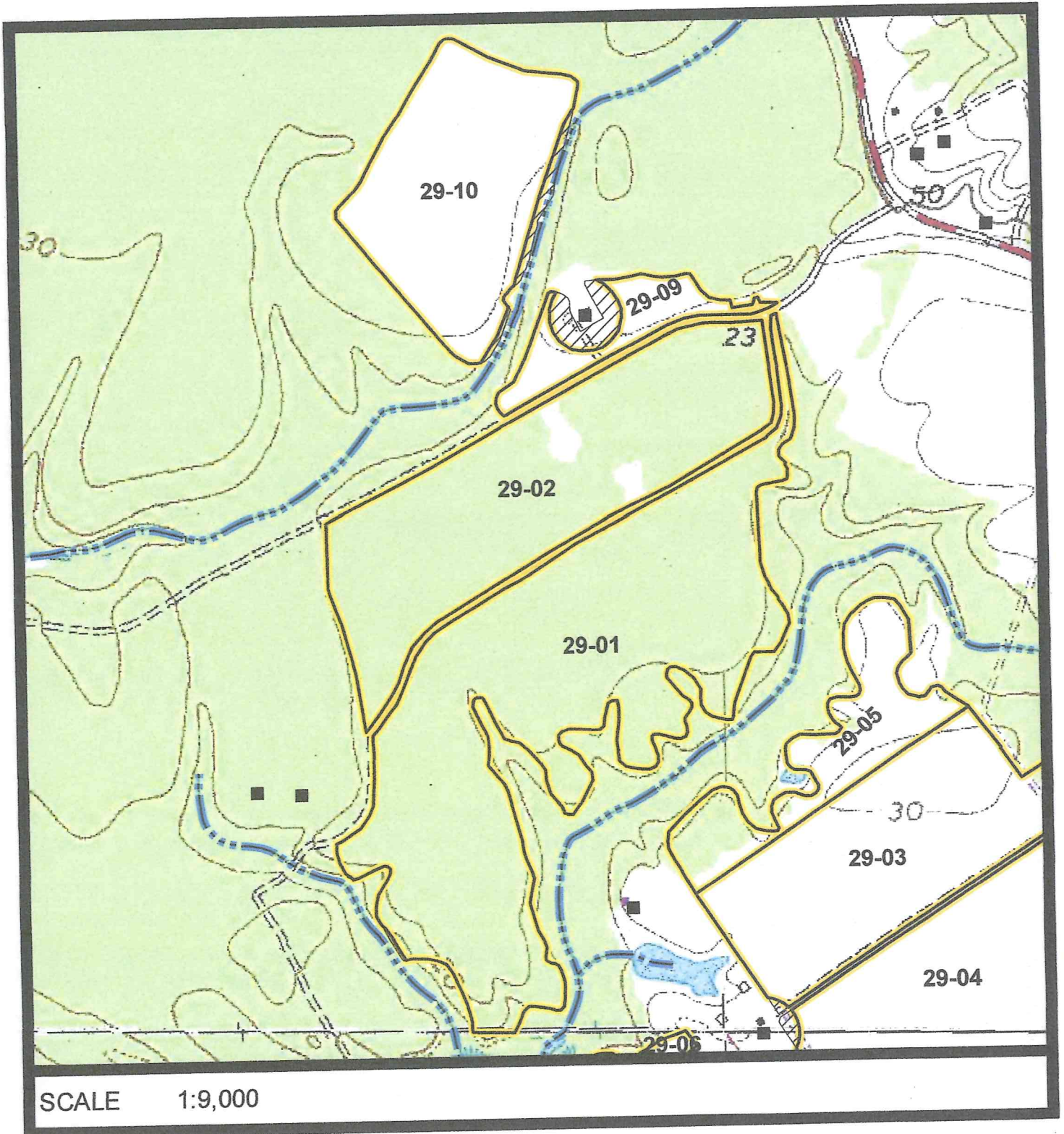
 Environmentally Sensitive Areas







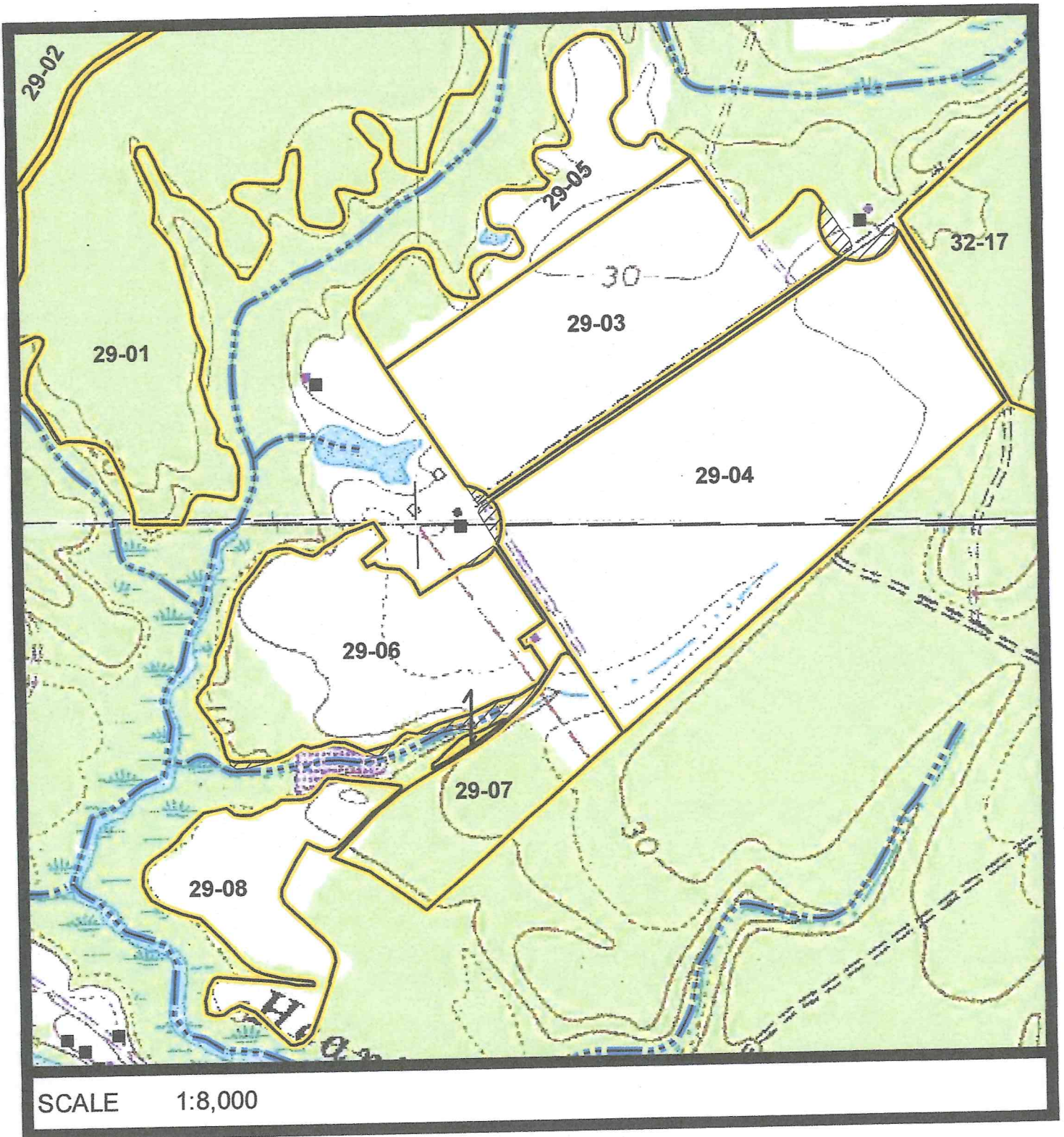




TOPO MAP





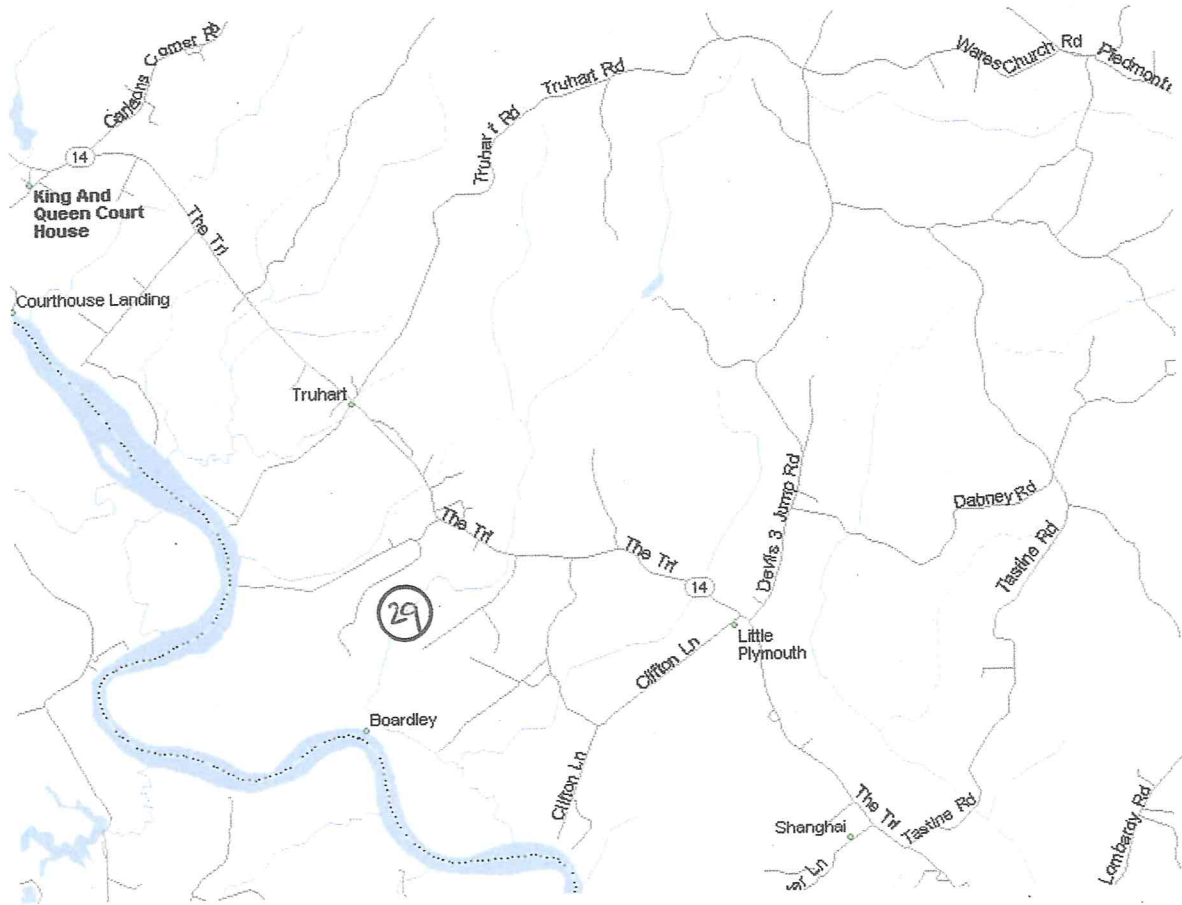


TOPO MAP





Rogers W. Carlton  
KQ29  
Fields 1 – 10



LOCATION MAP

